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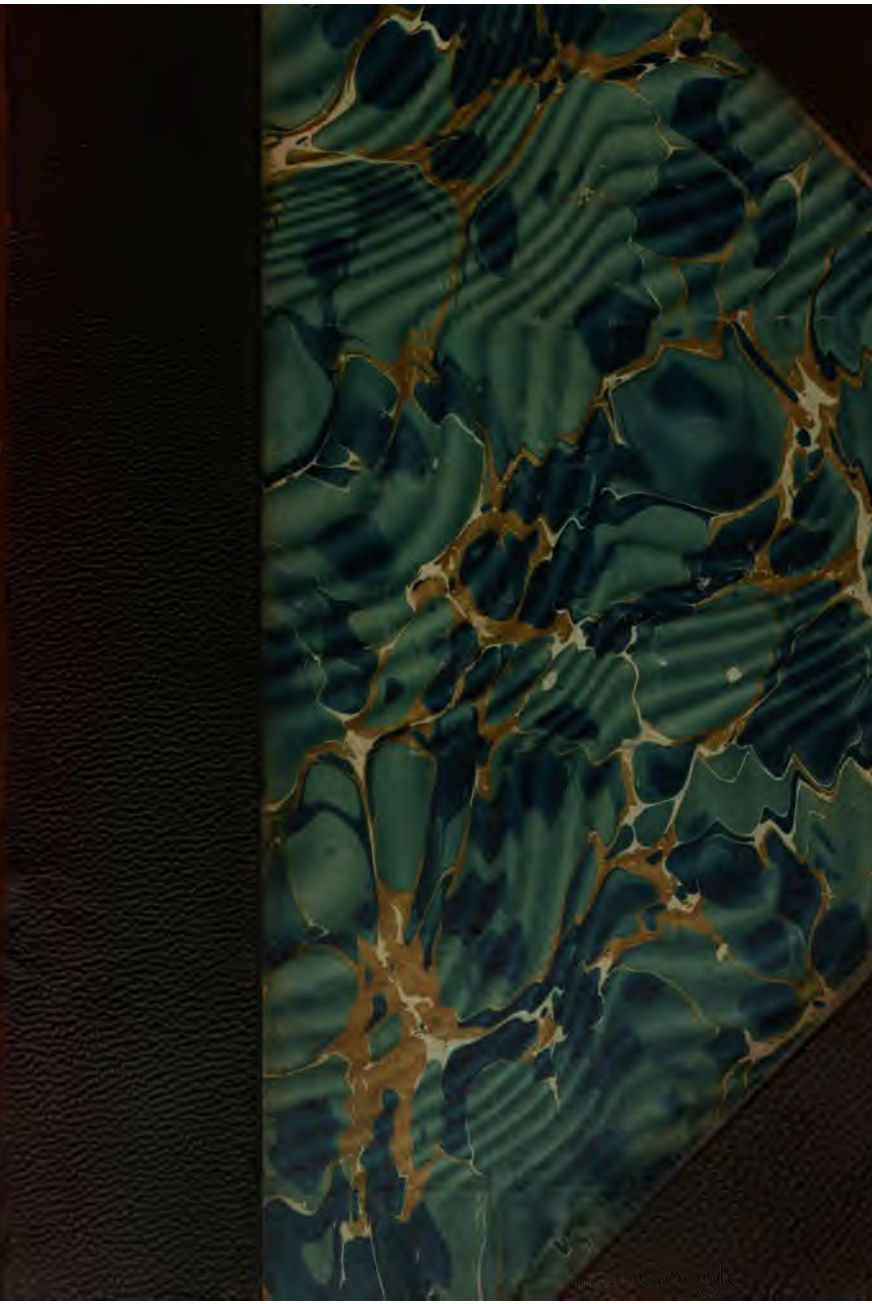
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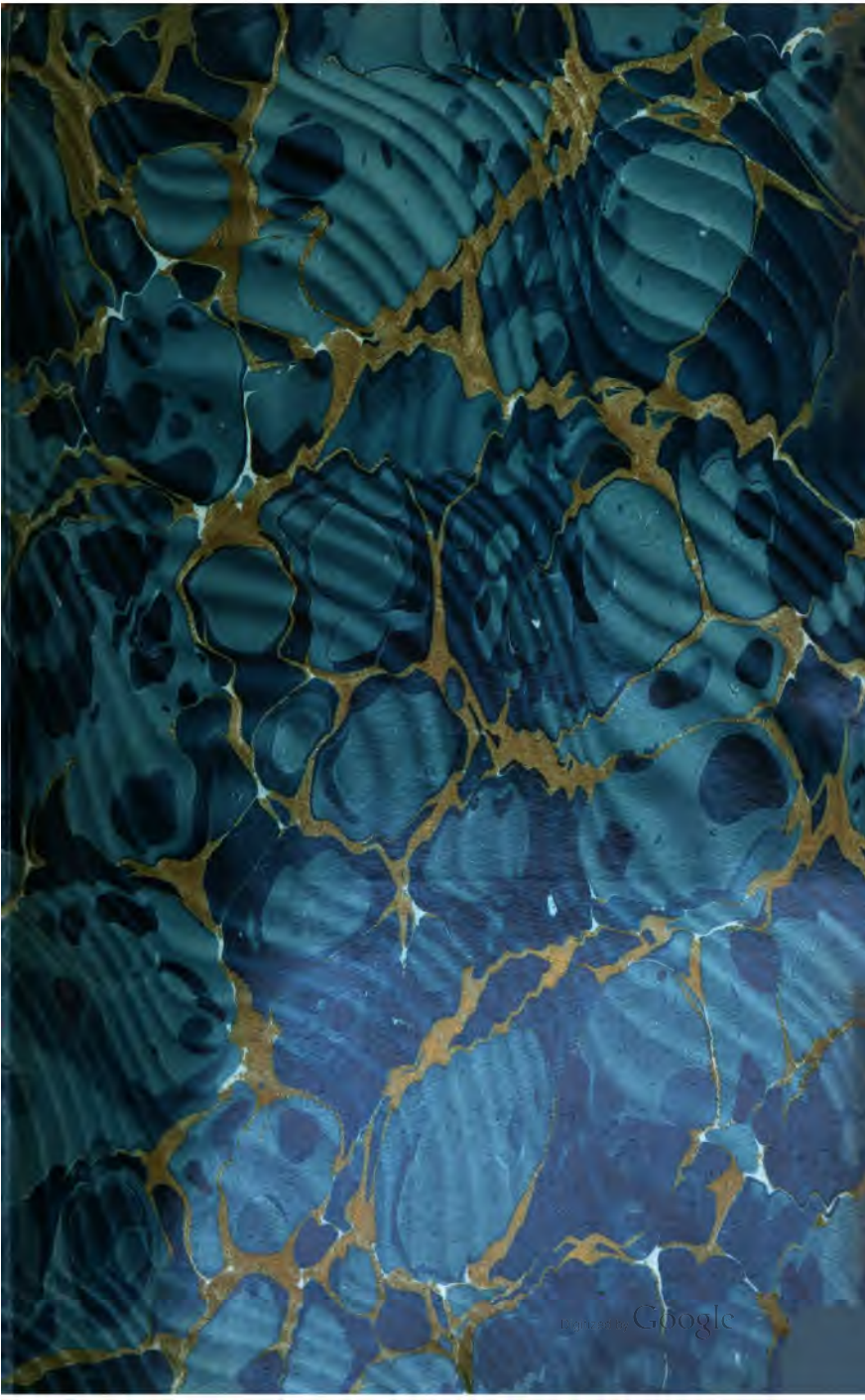
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SALMON IN THE THAMES, AND OTHER RIVERS.

BY

GEORGE VENABLES, S.C.L., F.R.A.S.

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REMARKS

UPON THE

FORMER ABUNDANCE & PRESENT NON-EXISTENCE OF SALMON IN THE THAMES, & OTHER RIVERS.

Probably no one who is acquainted with the beautiful scenery of our happy island will hesitate to pronounce that portion which presents itself to the eye of a voyager on the Thames from Twickenham to Henley, as among the most lovely specimens of richly cultivated and inhabited localities which this country possesses. It lays no claim to grandeur, and other places may excel it in what is commonly called "the picturesque;" but it affords an unequalled specimen of that which is the peculiar charm of England's beauties, viz., a rich and fruitful soil, a moderately thick population, and a constant variety of homely, but lovely sights. A singular circumstance connected with the natural history of this part of England has, however, occurred in late years, to which circumstance this paper will be chiefly, though not exclusively, directed.

How comes it to pass that the Thames, the noblest river in England, and, if valued by its other sources of importance, the noblest river in the world, can no longer boast of its salmon fisheries? How is it that its proud stream affords no such attractions to the fisherman as it did in the early part of this century,

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and, as it sweeps in graceful homage around the abode of royalty at Windsor, how is it that the best of rivers offers not, in its ample bosom, to her most gracious Majesty, the best of monarchs, a tribute of the best of fish? Even a building speculator might wisely make the inquiry; for if anything could enhance the value of those lovely residences which adorn the banks of the Thames, like beads of pearl upon a thread of silver, it would be the salmon struggling through the weir-dam, or leaping after the fly, and occasionally too, (as old Izaak Walton's disciples should revive), lying captive upon the lawn, in front of which he had often so gracefully sported. We examine the subject, however, rather as a fact in natural history, aided in this by some statistics of considerable interest; and, in other hands, of very great value.

The earliest laws of England defended the salmon from destruction with much strictness. It is not likely that the day will ever return when labourers shall stipulate that they shall *not* have salmon to eat oftener than three days a week; and it appears almost incredible that any such law ever existed in London; yet I have been told (I cannot verify this) that such was the case. However, in all calculations connected with the past and future of natural history in this kingdom, the immense growth of population must not be forgotten. We can well believe how much more numerous all kinds of fish and game must have been when the whole population of England was not larger than the present population of London; and it is certain that a great increase of population must tend to diminish all kinds of wild animals and of fish; but I am persuaded that this in no way accounts for the cessation of salmon in the river Thames.

Before distinctly stating that which seems to have brought about this disaster, I think that a brief digest

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of some ancient laws regarding the fisheries of Great Britain, as well as some anecdotes connected with one portion of the Thames, may not be uninteresting.

The first act of legislature which I have met with relating to fish is in the thirteenth year of King Edward I. (A.D. 1285), which enacts that—

"The water of several rivers, Humber, Owse, Trent, Done,* Arre, Derwent, Wherfe, Nid, Yore, Swale, Tese,* and all other waters (wherein salmons be taken within the kingdom), shall be in defence from taking salmons, from the nativity of our Lady" (Sep. 8th), "unto St. Martin's-day" (Nov. 11th), "and that likewise young salmon shall not be taken or destroyed by nets or by any other engine, at mill-pools, from the midst of April unto the nativity of Saint John. The 'first trespass' was to be punished by 'burning of their nets and engines;' for the second offence the offender was to be 'imprisoned for a quarter of a year;' for a third trespass, 'they shall have imprisonment a whole year;' and "as their trespass increaseth so shall their punishment."

The omission of the names of the river Thames—if, indeed, it be so—and of the Severn here, is remarkable; but it is possible that the larger rivers are assumed to be included as a matter of course, while the less abundant salmon streams are mentioned by name. However this be, we find a "Confirmation of the said Act" in the thirteenth year of Richard II. A.D. 1389) in which, it will be observed, the river Thames is distinctly mentioned, while the names of other rivers described in the foregoing Act are omitted although it is evident that this Act was intended to apply to all rivers to which the former Act referred. The statute runs:

Item. Whereas It is contained in the statute of Westminster the second, that young salmons shall not be taken or destroyed by nets, nor by other engines, at mill-dams, from the midst of April till the nativity of St. John the Baptist" (June 24), "upon a certain pain limited in the same statute, it is accorded and assented that the same statute be finally holden and kept, joyning to the same that young salmons shall not be taken during the said time at mill-dams, nor in other places, upon the said pain."

* Probably the Dove and the Thames.

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"And that no fisher or garthman,* nor any other, of what estate and condition that he be, shall from henceforth put into the waters of Thamise, Humber, Ouse, Trent, nor any other waters of the realm by the said time, nor in other time of the year, any nets called stalkers, nor other nets nor engines whatsoever they be, by the which the fry or the breed of the salmons, lampreys, or any other fish may in anywise be taken or destroyed upon the pain aforesaid."

Here follows a clause which shows that science was making a little advance upon the law makers; for it had been discovered that salmon are not in season in all parts of England precisely at the same period of the year, and, accordingly—

"It is ordained and assented that the waters of Lon, Wyre, Mersee, Rybbyl, and all other waters in the county of Lancaster, be put in defence as to the taking of salmons from Michaelmas-day (Sept. 29th), to the Purification of our Lady (Feb. 2nd), and in no other time of the year, because that salmons be not seasonable in the said waters in the time aforesaid."

It appears that in the days of Edward IV. the morals of the country were no better than at present, but that a system of unfair trading and dishonesty was too frequent. Let it be noted, however, that the statute which confesses this fault endeavours also to remedy it. This is the second statute of the twenty-second Edward IV. (1482):

"Whereas divers deceits have been used and done, as well as in the measures of vessels called butts, barrels, and half-barrels, ordained for salmon, &c. . . . . No merchant, stranger, nor denizen shall sell, nor set to sale any salmon by butt, &c., except the said butt do hold and contain fourscore and four gallons, &c."

Also, that no such merchant, "being under the King's obeisance," shall,—

"Sell or put to sale, any manner, salmon by butt or other vessel, except it be well and faithfully packed; that is to say, the great salmon by itself, without mingling with them any grills or broken-bellied salmon. And that all small fish called grills shall be packed by themselves only, without any mingling, &c."

* A garthman means the owner of a weir in which fish are catched. The term "fish-garth" is now used occasionally, and signifies a close or dam for catching fish.

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Here, then, we have the covetous fishmonger striving after unjust gain, by making his butts rather under size, and driving a pretty trade of deceit, as he stuffed a quantity of "grills and broken-bellied salmon" into the bottom or middle of his butt, while to the eye of the purchaser it contained the great salmon "only." Unjust sellers are, I suspect, often made such by unscrupulous buyers, who are ever beating down the price, driving cheap bargains, and then chuckling over their craftiness; and in order to humour such people, the seller is driven to be dishonest. One who had observed much, and who spoke by inspiration, remarks:

"It is naught; it is naught, saith the BUYER," not the seller. "But when he is gone his way then he boasteth!"

Neither can be approved, but it would seem that the fault originates with the buyers.

I suppose that the next fifty years were not conducive to the increase of eels or salmon. Perhaps the demand had been great, perhaps in the days of Richard III. and Henry VIII. poachers abounded, or the "garthmen" forgot their restrictions. At all events, in the twenty-fifth year of King Henry VIII. (A.D. 1533), it was enacted that—

"No persons with any nets, engines, or device, shall take any fry, or spawn of eels, or salmon in any waters during ten years, upon pain of forfeiture of v. li. (£5 ?) and his said nets, engines," &c.

I am afraid that many lived in those days who were unwilling to "submit to every ordinance of man, or even unto the king"; for just a quarter of a century passes away, and we find Queen Elizabeth and her advisers regarding with apprehension that—

"The spawn, fry, and young breed of eels, salmons, pikes, and all other fish heretofore, hath been much destroyed in rivers and streams, salt and fresh, within this realm, insomuch that they feed swine and dogs with the fry and spawn of fish and otherwise,

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lamentable and horrible to be reported, destroy the same, to the great hindrance and decay of the commonwealth."

It is then enacted—

"That no person or persons, of what estate, degree, or condition soever he be, or they be, with any manner of net, weele, but, taining, kepper, line, crele, raw, fagnet, troinet, trimenet, trawl boat, stallboat, weblister, seur, lammer, or with any device or engine made of hair, wool, line, canvas, or shall use any troling net, or trimboat, or by any other device, engine, cawtel, way or means whatsoever heretofore made or devised, or hereafter to be made or devised, shall take and kill any young brood, spawn, or fry of eels, salmon, pike, or pikerel, or of any other fish in any floodgate, pipe at the tail of any mill, wear, or in any straits, streams, brooks, rivers, fresh or salt, within this realm of England, Wales, Berwick, or the Marches thereof. Nor shall . . by any of the ways and means aforesaid, or otherwise in any river or place above specified, take and kill any salmons or trouts, not being in season, being kepper salmons or kepper trouts, shedder salmon or shedder trouts."

Further—

"No person . . shall take any pike or pikerel, not being in length ten inches or more, nor any salmon not being in length sixteen inches or more, nor any trout not being eight inches or more, nor any barbel not being in length twelve inches or more. And to the intent that the young fry, &c., may be preserved . . no person . . shall fish, or take fish with any manner of net, tramal, kepe, wore, hivie, crele . . but only with net or tramel, whereof every mesh or mash shall be two inches and a half abroad, angling excepted."

The Act is altogether a lengthy one. Not more than one-seventh portion of it is transcribed above; but enough has been copied to give the reader an idea of the vast ingenuity of our ancestry in those days, when such a host of "machines and ways and means" appears to have been invented to meet the difficulties which previous laws had imposed upon fishermen. It is worthy of observation here that this is the first time in which trouts, pike, and barbel are mentioned. Good Queen Bess never liked to do things by halves, and perhaps was resolved upon a vigorous preservation of all kinds of fish.

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It may be, too, that she knew of a better plan of cooking a barbel than we possess, and it is evident that however nice a piece of bacon or pork might be thought, the finny race were to be henceforth kept out of the pig-troughs, and to make more dainty dishes elsewhere. The preamble of this Bill, however, already quoted, gives us an idea of the comparative abundance of fish in those days. I must add that this lengthy Act permits of a slight modification, which is introduced here, as showing how other fish were treated in those days—

"In such places where smolts, loches, minnies, bulheads, gudgions, or eels have been used to be taken and killed, in all such places it shall be lawful, for the purpose of taking such fish only, to use such nets, lepes, and other engines as heretofore."

Minnows, or minnies, are, I believe, excellent eating, but I never heard of the bulhead garnishing a banquet. Perhaps Sir Walter Raleigh may have eaten them at the Royal table. Thus protected, neither salmon nor minnies appear to have been brought again under the consideration of our Legislature for several years. The King of Rivers continued his course alike, whether Charles reigned or Cromwell harangued his Parliament. But after the Restoration, and in the eighteenth year of Charles II., a Bill was brought into Parliament, and became the law of the land, forbidding the importation of cattle, sheep, or swine, or beef, pork, or bacon from any parts beyond the seas, or of

"Ling, herring, cod, or pilchard, or any salmons, eels, or congers taken by any foreigners, aliens to this kingdom;"

Any person might seize such fish—

"Giving half to the poor of the parish and keeping the remainder."

And this is stated to be done—

"For the better encouragement of the fishery of this kingdom."

The idea was, perhaps still further extended in the fifth year of William and Mary (1694), for, in an Act passed in that year for raising a million of money—

"Towards carrying on the war against France,"

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by granting rates and duties upon salt and beer, &c., a reward is offered to all exporters of many kinds of fish, and amongst these is a promise of

"Five shillings a barrel for every barrel of salmon which shall be exported."

This reward was more than doubled in 1698, in an

"Act for raising two millions for the payment of annuities, and for settling the trade to the East Indies."

The duty is laid on salt, but the exportation of fish even though salted, was thus encouraged.

Queen Anne, like Queen Elizabeth, beheld with sorrow the needless destruction of fish. It appears from cap. 21 of the fourth year of her reign that—

"Salmon and salmon kind of fish were in danger of utter decay;" at least, those which

"Resorted to spawn within the rivers and freshets in the county of Southampton and the southern part of Wiltshire, being destroyed by divers engines and devices in and upon the main rivers, and in the new channels, &c.; so that the salmon, stripes, or keppers, as well as the young fry, or smolts, are taken and destroyed, and are prevented from returning to the sea in season."

But I think that we begin to touch somewhat upon one cause of the diminution, though not the absolute cessation of salmon in the Thames in what follows, though it relates to other rivers—

"Whereas the owners and occupiers of salmon fisheries within the said counties" (viz., Southampton and Wilts), "regarding only their private and greedy profit, to destroy the stock of the said fisheries by preventing the breed of good fish to pass in season through their fishing wyres and fishing hatchways from the sea into the said rivers to spawn . . . . do take, kill, and destroy the said fish," &c.

What is the remedy? It is a new enactment to put in force the previous Acts, including that of 13th King Edward I. From which fact, as well as from many other Acts already more or less copied into this treatise, I gather that in truth the Act was not fully obeyed at any time. But two important provisions were added. The first of them required—

"That if any salmon or salmon kind should go into any dykes,

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cuts, or water carriages, all owners and occupiers : . shall permit the said fish to pass out within the said time" (*i.e.* of defence) "limited and restrained into the main rivers again."

The other important provision was that—

"All owners of corn, fulling, and paper-mills upon any of the waters or rivers of the said counties" (*i.e.*, Southampton and Wilts) "shall constantly keep open one scuttle or small hatch of a foot square in the waste hatch in the direct stream, wherein no water-wheel standeth, sufficient for salmon to pass and repass freely up and down the said rivers from Nov. 11 to May 31."

This enactment is of the very greatest importance, and is founded upon a right perception of the natural wants of the salmon. Furthermore, such arrangements were ordered as should hinder

"The salmon being taken during this period of the year in any eel-pot, and that the said eel-pots should be wide enough to let the young fry pass through to the sea," &c.

I believe that none of these laws are repealed. They refer, however, only to Southampton and Wiltshire. The last quoted Act provides also that

"No bouges or sea-trouts shall be taken in any rivers, creeks, &c., from June 30th to Nov. 11th."

But in the ninth year of good Queen Anne an Act was passed of more importance, as it regards the question of salmon in the Thames than any other. Hitherto the reader will have been surprised to observe how seldom the Thames has been mentioned by name in any of the foregoing enactments, and each person would form his own opinion whether this were to be traced up to the scarcity of salmon in that river, or come to an opposite conclusion, and infer that its importance was of course taken for granted. Cap. 26 of the 9th Queen Anne, is—

"An Act for the better preservation and improvement of the fishery within the river of Thames, and for regulating and governing the company of fishermen of the said river."

It empowers the Court of Assistants of the Fishermen's Company to make bye-laws to be approved by the Court of Aldermen, &c. It enacts that—

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"No person shall kill or expose for sale any spawn, fry, or brood of fish, or spatt of Oysters, or receive such things as food for hogs, under pain of punishment."

So that it would appear that Queen Anne had still to contend against the indulgence of the swine as much as her predecessor, Queen Elizabeth.

An elaborate Act upon fish and fisheries marks the first year of George I. Its chief object is to hinder fresh fish taken by foreigners from being brought to England. It gives leave for the importation of lobsters and turbots, in "foreign bottoms." But at the 14th section complaint is made that the several Acts of Parliament have proved ineffectual in respect to the rivers Severn, Dee, Wye, Teame, Weere, Teas, Ribble, Mersey, Dun, Air, Ouze, Swaile, Calder, Wharfe, Eure, Darwent, and Trent, and charges that the laws shall be obeyed. I think this is the first time in which the Severn and the Wye are mentioned. We may presume, I suppose, that the law was better obeyed in other localities; and in the Thames we can quite understand that the law would be much more easily enforced, under the authority of the Lord Mayor and Fishmongers' Company, so far as their jurisdiction extended.

I have met but with one more Act of any interest to the fisherman, and that is certainly a very singular one, on account of the medley of matters to which it refers. It was made in the twenty-third year of George II. (cap. xxvi). It regulates pilots, permits rum from British plantations to be landed free, prevents fraud in the measurement of coals, continues sundry laws against the exactions of occupiers of locks and weirs upon the river Thames westward, makes a proviso for the river Ribble, by which it is again made lawful to take salmon there between 1st January and 15th September, as it is found that this

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is the proper season for that river, the permission having been repealed (I suppose by an oversight) in an Act of George I., already spoken of. It concludes with an enactment for preventing the destruction of turnips, and the better regulation of attorneys and solicitors! And this completes, so far as I know, any important legislation about fisheries; but I have no means at hand for examining the decrees of the present century.

I trust this little digest, which is, however, far longer than I anticipated, may not prove useless. It is surely well to trace up, through succeeding ages, the interest shewn even in a fishery, while the information obtained by inference from such documents as I have quoted, of the manners and customs of the people, and of the care with which natural productions were regarded, is pleasing to the antiquary, and perhaps profitable to all. An editor of Walton records in a note a copy from a London newspaper for 18th April, 1789, which informs us that "the largest salmon ever caught was brought to London yesterday, 4ft. long, 3ft. round the thickest part of the body, its weight 70lb. within a few ounces." No salmon were allowed to be bought (by 1st George I. sect. 18), under 6lb. in weight.

I find elsewhere a memorandum of a salmon caught in the river Usk weighing 68½lb., 4ft. 9in. in length, and 16in. in breadth. Mr. Pennant mentions 74lb. as the greatest weight of one salmon he had ever heard of. It is said by some that the larger the fish the better the quality, but the fish mentioned as brought to London in 1789 was sold at one shilling per pound. The capture of a salmon in the river Tyne, which was 4ft. 1¾in. long, and weighed 54lb. is recorded in the Annual Register for 1760 as a remarkable circumstance. No less singular is an

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account in the Annual Register for 1764, when a Mr. Gleditch presented to the Royal Academy his observations on the method of increasing the fecundity of salmon and trout invented by Mr. Jacobi. From what is there stated, it appears that the scheme of Mr. Jacobi was almost, if not quite, the same with that now being tried in Scotland.*

About a hundred and twenty years ago a highly respectable man came to live at Cookham, in Berkshire, whose daily duties led him to the perhaps most ancient pursuit in the way of trade which exists in England, namely that of fishing, and cultivating and cropping the numerous osier beds which form many of the pretty islets on the Thames. In after years he removed three or four miles lower down the river, where he ended his days at an advanced age, being, I believe, over eighty at the time of his death. His son succeeded him, and carried on the same trade very successfully and honourably, and died a few years since in a good old age, deservedly respected and esteemed for his upright walk and conversation The father and son were men of much observation, and their pursuits would naturally give them many opportunities of exercising that faculty, which they seem never to have neglected, and which generally renders men thoughtful and happy. The patriarch appears to have handed down, by oral tradition, whatever he knew concerning the fishery, and his son has left but few records behind him; but those few are very interesting and instructive in reference to salmon in the Thames. His son† (the grandson of the person first mentioned), now occupies the home, the osiers, and the fishery which his ancestors possessed before him, and has most kindly lent me the memoranda written by his father,

* Sea Fisheries Commission Report.

† 1*st ed* 1858. He, too, has passed away, 1874.

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adding thereto much valuable information of his own. He is, I am persuaded, able to throw much light upon the subject of salmon in the Thames, and I much regret my inability to give the facts recorded by his father more general publicity. His father's manuscript-book is entitled "An account of all the salmon caught at Boulter's Lock and the contiguous part of the Thames, from 1794 to 1821, both years included; that is to say, twenty-eight years or seasons."

"Boulter's Lock" is about a mile above Maidenhead Bridge, opposite to Cliefden Wood, and its cascade is one of the finest on the river. Each year's memorandum is contained in seven columns, giving in succession "the day of the month, the number of salmon caught, the place where caught, the weight, the age of the moon, and remarks." It appears from this book that "in 1794, between May 20 and August 23, fifteen salmon were caught, whose total weight was 248½lb., or the average weight about 16½lb. The largest weighed 25lb., caught June 9, and the smallest, caught August 23, weighed 11¼lb. One fish only was caught in the pool" (I suppose by net). All the others were taken in the "bucks;" but this demands a remark. Many persons would imagine that the salmon caught in the bucks were taken as they were running down stream, just as the eels, for whom the bucks are set, are caught. But this is not the case. The salmon, when so caught are going against the stream, and arriving at one of the bucks, force themselves, by an almost mysterious power, through the rushing waters over or by the side of the buck (butt ?) but before they recover themselves from this extraordinary feat, they are carried back, and falling immediately into the buck, are caught in it. So, at least, I am informed by the intelligent son of the writer of the memoranda from which I am copying.

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Amongst the "remarks" for the next year (1795), I find that two salmon, one weighing twenty-one, and the other eighteen pounds, were sold, May 11, at 5s. per pound, producing £9 15s.! Nineteen fish were taken this year; eighteen in the bucks, and one in the lock pool. The average weight was little over eight pounds. Two fish weighed four pounds only; and the worthy observer notes, "This year was remarkable for small fish." Of the eighteen salmon, weighing 328lbs., caught in the succeeding year (1796) he notices that the largest was caught April 28th, in the sixth buck (there are nine bucks), and weighed thirty-seven pounds. The smallest was caught August 11th, twelve pounds weight. "We caught eight in the lock pool, and ten in the bucks; not one in the buck pool, for this year the buck pool was productive of nothing but great stones and hangings."

"August 4. We drawed the lock pool with a 6½ inch wide net, but caught nothing. We immediately after this stalled the net, and during the night caught two salmon, of twenty and sixteen pounds. We also on the night of the 11th August, caught another by stalling in the same place, *i.e.*, between the lock and buck pools, by running directly down from Arrow-head to the tail of the pool."

1797 was a more abundant year. Thirty-seven salmon, weighing 670½lbs., rewarded the fisher's toil. The largest was caught March 27th, in the second buck, of thirty-one pounds; but, being dead, it sold for no more than 2s. per pound! But one note here is of special interest. We can almost realize the joy with which, "April 25, I by myself had six in the first buck, of 126 pounds, though they were not all perfectly in the buck, but some in the thorough and head, and three in the tail, and two or three of them dead."

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"We caught in the same buck this season twelve salmon, that weighed 232lbs." "The fish in general this year ran very large (average 19lbs; smallest 5½lbs.), but none of them went to a very good market, as many of them were caught in the bucks, and thereby very much beaten." Only 2s. per pound for such fish!!

1798. "Sixteen fish, 317 pounds, some sold at 5s. per pound. The largest fish weighed 28lbs."

1799. The century closed with a gift of thirty-six salmon this year to the respected fisherman of Boulter's Lock and Pool—seven in June, nine in July, fifteen in August, five in September, averaging 14lbs., the largest weighing 28lbs. again. The remark here and elsewhere repeated, is worth consideration, as suggesting the habits of salmon. "Seventeen of the thirty-five salmon caught this year in the bucks, were caught in *one* buck (viz., the *first* buck)."

1800. "It proves in this year that we caught twenty-nine salmon, that weighed 388lbs. One thing we have to notice, that this year we made use of a long purse-net to the first buck, fixed so as to admit the fish after passing through the stopper-hole; but we found, on trial, that this did not answer, as we had several salmon killed in it; therefore, we discontinued the practice after this and the following season." The first buck, however, again proved most successful, though not so much so as formerly. Seven were caught in it; nine in the other bucks; ten in the lock pool, and three in the bucks pool. Seven in June, fifteen in July, and seven in August.

In 1801 we arrive at the culminating point. After this the fishery begins to lessen in value, and in twenty years is extinct! What can have happened during that short period to drive all the salmon out of the Thames, in which they have sported for centuries?

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We find from the MS. that just over half-a-ton weight of salmon was caught at this one fishery this year!—sixty-six salmon; total weight, 1,124lbs.!! averaging 17lbs. each. The largest, caught May 26th, weighed 37lbs.; the smallest weighed 6lbs. "In April, 2; in May, 21; in June, 19; in July, 21; in August, 7; 47 were caught in bucks; 11 in the pools; four in buck-net" (No. 1 was not so successful this year, perhaps the *net* would restrain the fish from leaping up that buck); three in the lock-head; and one *athwart a rack.*"

Some special memoranda must be added here. "May 14, 1801. We caught one salmon in the second buck at the lock, 26lbs.; one in the lock pool, 29lbs.; and three at the lock-head the same day, 70lbs.—in all 125lbs." He adds: "Friday morning, May 15, 1801. We had nine salmon in the well boat that weighed 209lbs., sold for 2s. 6d. per lb."

No exact memorandum appears to be kept of the price which all the salmon fetched, but a significant note intimates that "Thames salmon" was in favour; for he remarks: "1,124lbs., at 2s. 6d. per lb., *to say the least*, comes to £140 10s. Has any one gained by the loss of such fisheries? Be it remembered, this is but one out of many on the Thames.

1802. Eighteen fish, 297lbs., realizing 5s., 6s., 2s., and 1s. 6d. per lb. Two were caught "athwart a rack," and one of these was dead.

1803. Twenty fish, 374lbs. But then "although there have been but few fish this year, most of them have gone to a very good market; upwards of 240lbs. sold at 5s. per lb."

Here are *sixty pounds* sterling, then, besides 137lbs. of fish left to sell at a lower figure—perhaps *only* 2s. 6d. per lb.

1804. "This year stands next in rank to 1801—

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in April, 3; May, 5; June, 11; July, 29; August, 12; September, 2=62. In the deep, 1; in pools, 17; in bucks, 44=62." Largest, 32lbs; smallest, 3½lbs. Price from 2s. 6d. to 5s. per lb."

1805. "The only thing we can say is, that this was the worst season we ever knew; but very few fish, and none went to a very good market, viz., seven fish, weighing 117lbs., 16½lbs. each."

1806. Twelve fish, 245lbs.; 20¼lbs. each. The largest weighed 33lbs., and fetched, though caught in a buck, £9 18s." One fish, weighing 22lbs., "was caught just at the top of the ait,* in a cod net, by my father and myself and brother. For several days prior to this there had been some very heavy gales of wind from S.W. and N.E." Another salmon, weighing 32lbs., "was spoiled by going to London by a slow coach; instead of fetching 6s., it fetched only 2s. per lb. This is one of the most extraordinary seasons we ever knew, for not a fish was caught from 16th June till 8th September, an interval which in general proves the most abundant part of the season." Only one fish was taken after June 16th, *i.e.*, on September 8th.

1807. Although only sixteen fish were taken, there was a return of £51 8s. 9d. for them, the highest price being 7s. 6d., and the lowest 2s. per lb.; the average weight, 16 fish, 253lbs., nearly 16lbs. each.

Remarks. "We may observe, from the catching of this fish (which fetched 7s. 6d. per lb., and weighed 23lbs.), what an influence the weather has; for this was the only warm night we have had for near six weeks, and the water moderately low during the whole time." "It is very extraordinary in this year, that not one fish was caught in the month of May."

* Ait, or Ayot, or Eyght, or, as some say, Islet.

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Surely disturbing influences are already shown to be working in the Thames.

1808. "Five salmon, 88lbs." The only remark here is:—"Monday, May 23; caught one in the second buck, at the lock; weight 18lbs.; sold at 8s. per lb.=£7 4s. "This was the highest price we ever got for salmon."

1809. Eight fish; 116lbs." "But very few fish this season, and those few went to a very bad market."

June 21. "We may observe, that the lock was shut in only the very day previous to the catching this fish (the first this season). From this we may infer, that while the lock remains open, there is very little chance with the bucks."

N.B—Doubtless he argues correctly. As long as the lock was open there was a fair space for the fish to ascend; when this was shut in, the only way for the fish to ascend was by the bucks, into which they often fell. He adds, of the second salmon, "This fish was caught athwart a rack, and when we found him he was quite dead, but not so far gone but what he crimped very well by doing it immediately."

1810. "Four fish, 70 lbs., at 2s. 6d. and 3s. per lb. All that is left to be said about this salmon season is, that it is a considerably deal worse than any former ones." What was the Lord Mayor about? rather, what was doing in London? An observant man, like the respected writer of these interesting memoranda, however, could hardly fail of finding something more to say, in spite of his foregoing remark; and here follows a curious but not unparalleled anecdote:—

Friday, 29. "One salmon, 18 lb., 2s. 6d. per lb. This fish actually caught himself, which was by leaping into the punt while she was tied to the campshot, close to the tail of the lock-bucks in the night, where I found him the next morning, dead. The bucks were laid during the time."

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I may say a little about trout presently; but I will just mention here, as confirmatory of our worthy friend's anecdote, that about eighteen years ago, a fine trout, of four or five pounds weight, leaped into a garden close to the stream, and so was caught, being unable to return. This was at Snakeley* Mill, upon the Wycombe stream, which, thirty years ago, abounded with very fine trout.

1811. "Sixteen salmon, 181¾ lbs., from 1s. to 8s. per lb.; the largest, 16 lb.; the smallest 4½ lb." (The size of the fish decidedly inferior.) "It is observed that this year the lock was shut in only two days previous to the catching of the first fish—a standing proof that there is very little chance *with the bucks* while any part of the lock remains open." This is important, and shows that if salmon are to propagate, there should be a fair opportunity at every weir to allow them to work upwards. The last eleven fish that were caught were not only late in the season, but, to make it still worse, they were very early swum fish, so, upon the whole, we may pronounce them out of season." (They appear to have been caught in September.) "It is very extraordinary, seven were caught at one haul in the lock pool, and three in the buck pool, the same day—ten salmon in one day, September 5, 1811." Query; Had these poor "out of season" fish taken their annual trip towards their marine residence, and had they found the water about London in such a condition as to be afraid to venture through it?

* The beautiful kingfisher was formerly very common on the banks of this stream. Snakeley was a favourite breeding place with them, and they might be frequently seen feeding their young, whom they arranged in due order upon the top rail of a bridge in the garden there, bringing them a constant supply of food from the stream.

1874.—I rejoice to remark here that (thanks probably to recent legislation) kingfishers are increasing. They still make their nests about Snakeley, and I saw a large number between Henley and Maidenhead this August.

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1812. "Eighteen salmon ; 224lbs." average, 12½lbs.

1813. "Fourteen salmon ; 220lbs. ; average, 15¾lbs. ; two of these 22lbs. each."

1814. Thirteen salmon ; 97½lbs. ; " average 7½lbs. Notice the smallness of the fish. There must be a change in the state of the waters somewhere.

1815. " Four salmon ; 52lbs. ; " 13lbs. average. " It now appears that the salmon fishery in the Thames is falling off very fast."

1816. "Fourteen fish; 179lbs.;" barely 13lbs. average.

1817. " Five fish ; 76¼lbs. ; average, 15¼lbs.

1818. " Four salmon ; 48½lbs. ; average 12lbs.

1819. "Five salmon ; 84lbs ;" produced £16 13s. 6d.

1820. "In the year 1820 not one salmon was caught by us, nor by any person, within several miles of Boulter's lock."

1821. " Two salmon were caught, weighing 18lbs. and 13lbs ; the former on Tuesday, June 5, and the latter, July 13."

Here the record of salmon taking ends. I believe that occasionally, within the last twenty years, I have heard of a salmon being caught ; possibly a fine trout was mistaken for a salmon, though this is not certain ; but of late years not a salmon has been seen.

The compendious view which follows is too useful to be omitted :—

NUMBER AND WEIGHT OF SALMON CAUGHT FROM 1794 TO 1821, BOTH YEARS INCLUDED.

Year.	No. of Fish.	Weight lbs	Year.	No. of Fish.	Weight. lbs.
1794	15	148	Brought up	376	5966
1795	19	168	1809	8	116
1796	18	328	1810	4	70
1797	37	670	1811	16	181¾
1798	16	317	1812	18	224
1799	36	507	1813	14	220
1800	29	388	1814	13	97½
1801	66	1124	1815	4	52
1802	18	297	1816	14	179
1803	20	374	1817	5	76½
1804	62	943	1818	4	48½
1805	7	116	1819	5	84
1806	12	245	1820	(not one caught)	0
1807	16	253	1821	2	31
1808	5	88			
Carried up	376	5,966		483	7,346¼

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"If this journal had been begun about twenty years earlier, say about 1774, our figures would have run much higher, both in respect to numbers of fish and likewise weight. I think that it must be about the year 1780, that my father caught upwards of fifty salmon in that reach opposite Clieveden Spring (about one and a half mile above Boulter's lock), and the other fishermen caught in equal proportion. I remember" (this was evidently written some time afterwards, perhaps under a feeling that such things would be doubted in a few years) "catching a salmon in the buck pool on 26th June, 1793, that weighed 42lbs ; length, four feet one inch." A little bill is stuck in the book, by which it seems that, "January 27, 1814, one lamprey was charged seven shillings."

The son of the writer of these memoranda informs me that he has often heard his father say, that he remembers seeing one Hobbs (a noted fisherman) take twenty salmon in a net, at one haul, in Chelsea Reach; and he also informs me that £800 a year were paid to one net maker alone, in Fenchurch Street, *for salmon nets for the river Thames.* Salmon hatches existed in the neighbourhood up to 1780. It is possible that other journals might be found which fishermen have kept at other fisheries on the Thames; and if so, a comparison of notes would be useful. It is probable that a gradual diminution in the quantity of salmon may have taken place from the time when Queen Anne made laws about them; but I think we may fairly assume that salmon began to diminish sensibly both in number and in size in the Thames from about the middle of the last century. "Our figures would have run much higher, both in respect to numbers of fish and weight," says our faithful chronicler of that period. It remains to inquire—What is

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the cause of this falling off? Such is the usual and, seemingly, very proper question; and yet I think we shall fall into an error unless we amend it, and ask, rather, What are the probable *causes* of this? for I am persuaded that *no one cause* will account for it; and I am inclined to believe that many of the causes might, if the matter were taken up with energy and prudence, be removed. But before "coming to closer quarters" upon this subject, I may be allowed to diverge to the question of trout-fishing, since a slight examination upon this subject may do much to facilitate our general inquiry.

It is argued by some persons that the cessation of salmon in the Thames arises from local causes entirely, and, amongst other causes, from the chemicals used in factories upon the river. That this is not altogether correct is certain, from the well-known circumstance that more fish are found around the mills than in any other spots in the river; and, if chemicals were the cause of the destruction of salmon, it seems curious that all the other fish are not killed also. Trout are not so abundant in the Thames as they once were, yet they cannot be called a scarce * fish. I have evidence of some large trout being in fine condition within a quarter of a mile of the noted "Boulter's lock," but a few weeks ago. Nevertheless, chemicals do exercise a very pernicious influence in the rivers upon fish, and, doubtless, might do so in the Thames, unless care were taken to prevent this, which can be easily done. Instances have occurred on the Thames itself in which fish have been killed by an accidental introduction of chemicals into the waters; but, I contend, this cannot be the cause of the destruction of salmon, since almost

* 1862.—They are now, however, rapidly diminishing in number.

1874.—I really believe that there is now a slight increase of fish in the Thames.

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every kind of fish, and trout in particular, frequent the tails of the mill streams as much as ever.

The Wycombe stream, indeed, affords a lamentable proof of what can be done by indifference in reference to this matter. Mr. Hofland, in his charming little work on fishing, tells some pleasing tales about the Wycombe stream, and speaks of catching twenty brace of trout in four hours, a feat which I have no doubt was performed, and with less difficulty than there would be now in catching as many in four years. Indeed, if my information be correct, there is not a trout left in the stream.* I saw a small one five years ago, but have not heard of any since then; and yet it is not twenty-five years since a gentleman, upon granting a lease of his mills on the Wycombe stream, stipulated that a certain number of trout should be sent him annually from the part of the river which belonged to him, but this became impossible before seven years were over, and although I have repeatedly seen eight to ten good trout caught in one mill tail in one day, none under 2lbs. in weight, and some over 5lbs., this is now impossible, owing almost entirely to the chemicals used in the mills, and which are emptied, without any attempt to render them innocuous, into the little river. Poachers, too, regardless of the future, would occasionally use a few pounds of bleach (chloride of lime), and putting this into the water to render the trout incapable of escape, destroyed all sizes together.

It is singular, if the assertion be true—as I believe it to be—that though chemicals are not used towards the top of the stream, there are very few, if any, trout even there. I have an idea that trout are, as to their

* A.D. 1866.—There are still a few trout in the higher part of this stream. The trout which once were so abundant here were remarkable for their size. A.D. 1874.—There are a few good trout in the "Back stream" between Wycombe and Loudwater, also "bull-heads" or "miller's thumbs."

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habits, somewhat like to salmon, and, after spawning, migrate downwards. This, at least, is my impression. Thus, then, all the little trout-streams which run into the Thames would furnish it with an importation of trout annually, many of which would return presently to their native stream, while others might remain and become at length almost too large to return to the home of their birth in the narrow streamlet. But if this be so, it is easy to see how the Wycombe stream should have no trout, or, at least, very few, even at its rise, because, having gone downwards towards the Thames, they would never return, being met on their way by the overpowering "chemicals," and thus destroyed. And thus, too, the Thames would, by the loss of its tribute, reduce the number of its trout, though it would not become entirely destitute, since many breed in the Thames itself. If every gentleman working mills upon the little "Wyk" would determine so to arrange the use of his chemicals as to hinder their being poured wholesale and undiluted into the waters, I believe that presently ten brace of trout might be taken in four hours again.*

What I have said here shows how thoroughly destructive chemicals are to fish; but, I contend, that at present this has not operated to any important extent in the Thames; and I adduce, as a proof, the number of large and small fish, and of trout, in particular, which may be seen around the mills on the Thames. Possibly, more care has been taken there than elsewhere, and the great quantity of water rushing through the mills would speedily dilute any but a very strong dose of chemicals. Great care certainly ought to be taken in this particular, but I feel confident that no

* Springs, too, wherever found near the main stream should be deepened in their channels and rendered as attractive to trout as possible. Such places would form "harbours of refuge" to the fish, as the chemicals could never reach those places.

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local cause has driven the salmon from the Thames. Indeed they were gone before chemicals were used, and I again repeat, the presence of large trout now shows that the chief cause cannot be local. Assuming this to be correct it remains to enquire what difference exists betwixt the trout and the salmon which may suggest the solution to our inquiry. The trout may migrate after spawning, a few miles down stream, and perhaps (probably) into a larger river. The salmon migrate down to the sea to return in due season. What changes then have arisen in the course of travel, which the salmon must pursue in its way down the Thames to "breathe" the saline draughts of the Nore? Assuming that salmon began to diminish since 1750, what changes may be suggested as unitedly ending in its banishment from the Thames?

There are no places of sufficient size upon the banks of the Thames to injure the waters by sewage until it reaches London; but having swept along its graceful way, clear and sparkling—a fitter river for the king of fish than any other in Great Britain—it is received at the grandest city in the world by constant salutes of filth and sewage, of immense value if men would learn cleanliness and economy from God's book, which shows that the one and the other go really together, and which shows too that filthiness is abhorred in His sight. (Deut. xxiii. 12, 14)* These constant streams of filth flowing into the river, and thrown back continually by the tide, reduce the Thames from a fine salmon river into a mass of moving mud, tossed about, and prevented from ever depositing itself by the constant agitation of steamboats.

This is, I am persuaded, the chief of all the causes

* The passage referred to is a remarkable one, and suggests two of the first principles upon which a system of sewage should be attempted. I have been very glad to see (A.D. 1866) that at the pretty and thriving town of Worthing a good system is being carried on upon those principles, and with good success.

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which reduced our friend's diary from 1,124lb. of salmon in 1801, to *nil* in 1820, and, being a slowly increasing evil, scarcely felt until the population became larger than it was a century since, it may be assumed to have begun to operate somewhere about 1750, and to have gradually reduced the number as well as the quality of the salmon altogether. A great authority (Lardner, "Naturalist's Library"), speaking of the salmon in America, states that they have ceased in many of the American rivers, owing to the steamboats. If this be correct, no hope remains of restoring them in the Thames; but I can scarcely think that the action of steamboats alone could prove destructive. I should rather suspect that it will be found, upon close examination, that the American towns, even if they do not pour streams of filth, such as we see in London, into their rivers, do yet permit deleterious and poisonous mixtures to find vent in their rivers, such as will destroy any fish in the neighbourhood. The mere action of steamboats upon large rivers could not, I submit, be destructive, if it were not for the accumulation of filth which they are constantly stirring up. The question of the effect of steamboats ought, however, to be well investigated, but we may remark here that the salmon had ceased in the Thames before steamers plied much upon it. I am persuaded that if the subject be thoroughly inquired into, it will be found that during the last century a large number of circumstances have arisen on the banks of the Thames, every one of which has exercised a pernicious influence against the existence of salmon, and, indeed, of any other fish. Perhaps the locks may be reckoned among other injurious causes, and many persons so regard them, although I cannot see how they act very injuriously upon a flowing river, since, in any case, an open water-way

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remains. Nevertheless, the lock at Teddington (Tide-end-Town) is popularly regarded as a great obstruction both to salmon and to eels. I have not had an opportunity of inspecting the state of the river there, but I conceive that no real obstruction to the ascent of salmon need exist there. Nevertheless it is the common opinion that "eel fairs" have ceased for the last sixteen years, owing to Teddington lock. "Eel fairs" used commonly to occur about every seventh year, when thousands of little eels worked their way up the river, climbing over many obstructions, even surmounting the lock-gates, if the gates were wet, and being caught by every boy in the neighbourhood. I have heard of the same phenomenon in the Cherwell from one who fished in that river and cropped the rushes upon it more than a century ago. I suggest, however, that the emptying of all sorts of injurious matter into the Thames is the chief and increasing source of evil, and that amongst these none are so bad as the gas-works; indeed, a few facts connected with gas-works tally with remarkable accuracy with the records of salmon-fishing at Boulter's Lock. Thus gas-works began to be used in London about 1813, and the very next year the salmon are diminishing in size as well as number! In 1815 an action was brought against a gas company near Salisbury-square, because the effluvia from their works was conducted into the Thames. If the salmon had supported the action, probably the evil, and many like it, would have been entirely stopped, and salmon would still have flourished in the Thames. In 1819 the "Annual Register" tells us, "they are now laying down gas-pipes adjoining Covent-garden preparatory to the whole of the parish being illuminated with gas." Two years after this the salmon are extinct; and if gas-works do, only in a few cases, pour their effluvia,

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or any of their lime which is used in cleansing the gas, into the river, it would prove fatal to all kinds of fish for a long distance down the stream.

I gather then, from all that I have been able to learn upon the subject, that the extinction of salmon in the Thames above London is owing to few, if any local causes existing at the time of their extinction, although some things may now exist in the localities they formerly frequented, which, unless removed, would be unfavourable to their flourishing there again; though, I repeat it, trout (and some of them very fine fish) are still far from scarce in the neighbourhood referred to.*

If I am right in my conclusions, I may venture to offer a few suggestions by which it is highly probable that salmon could be restored to the Thames. The first of these, however, is entirely dependent upon the Board of Health. So long as the Thames, instead of being the noble river of London, continues to be the common filthy sewer of that wonderful city, no hope whatever remains. The horrible condition of that river illustrates with fearful accuracy the results of vice upon a community; it is felt in its influences where it is little suspected, and where it even seems impossible. The absence of salmon at Windsor, and Taplow, and Henley, and, perhaps, at Oxford, is silent testimony to the condition of the water at London. There is much reason to hope, however, that this state of things will not long continue, and it is in the hope that a grand effort, worthy of the city of London, will be made to carry right away from its river the sewage of its streets, that I have ventured, in my hours of recreation, to contemplate the suggestions which are

* This is no longer true. All kinds of fish (eels particularly) are fast decreasing in the Thames, A.D. 1864. But it seems that there is now, A D. 1874, a turn for the better in this matter.

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now offered with much diffidence, because when the Board of Health begins is the time for the naturalist to begin also. If the Thames once again continues its course to the sea with the clearness it still possesses before it approaches London, all other difficulties may, with patient perseverance, be overcome. Let only a body of gentlemen residing on the banks of the Thames take a little interest in the matter, and in a few years the results would be all they could desire. Presuming the river to be freed from the sewage of London, I really think that all other needful circumstances may be obtained.

1. Every possible precaution should be taken to secure an open running stream wherever a weir, or pound-lock, or factory, causes a pen in the natural flow of the river. Through a great portion of every year there would be no difficulty in obtaining this; but, occasionally, when, through a long drought, the waters fail, every millowner is naturally anxious to make use of all the water which comes down to drive his machinery. A small "hatch," however, might be so contrived as to run over at the high-water point, or perhaps a little below this (with consent), and the water might, I think, be so concentrated below as to enable the fish to swim up it and to ascend.* Unless a facility for this be secured, it is quite hopeless to calculate upon having salmon in the Thames. "There is that scattereth, and yet increaseth." The miserable policy which would catch every salmon on its upward march to deposit spawn would soon ruin any attempt to propagate them. Salmon cannot be "preserved" by keeping them within certain limits. A free open passage of, say twelve inches diameter, up the river, always open, must be secured and all would reap the benefit. The salmon is emphatically a free-

* There ought also to be two or three good salmon-ladders at every weir.

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trader, and must have no restrictions in his travels. I believe that in a great portion of the year a very large hatch, giving a clear passage, may be always running; at other times it could be arranged in the manner I have suggested, and on every Sunday it might run to a much greater extent. A law in nature can no more be neglected with impunity than a law in morals. Salmon must have "free ingress, egress, and regress" throughout their rivers, or they will never flourish.

2. It need hardly be added that there must be an introduction of salmon, but this demands no remark, since the scheme lately put into operation in the north appears to be very successful; although, as already mentioned, a very similar plan is recorded in the "Annual Register" for 1764.

3. And there is no doubt also that active precautions will be very necessary to enforce the observance of such laws as are really conducive to the preservation of salmon and other fish, and to the prevention of poaching and other clandestine means of taking them. Moreover, every effort should be made to prevent the introduction of deleterious matter into the river from tanyards, from paper mills, from gas-works, from sewage, and from whatever source; and if, in addition, the gentlemen whom I will presume to be the Committee of Management, would extend their influences to those smaller spring streams, which are naturally adapted for trout, and seek to carry out the same principles in these which I have suggested for the Thames, there is no doubt that a large addition to the number of trout in the Thames would be secured. Perhaps, also, it might be wise to restrain an abundance of very large pike in the river; though I am far from believing that game or fish are increased by an entire destruction of those animals, or fish of prey, which are known to attack them.

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4. And certain spots ought to be left entirely free for salmon. Places should be ascertained which are likely to be favourite spawning places with them, and these should be carefully guarded against ballast-engines and gudgeon-rakes, so that the spawn might be safely preserved. When we consider the quantity of spawn which even one salmon produces, it must be plain that, with common care, the roe might soon become abundant. The spawn of one large salmon would replenish the river. I repeat it, however, *all laws must be based upon the common-sense principles of nature;* and since it is well known now that the salmon requires a free passage up the river, and, presently, a free passage down it to the sea, any scheme for the propagation of salmon which fails in these particulars will surely pay the penalty which always follows a neglect of nature's laws (a hint to us, this, of a great moral truth), and will be unsuccessful so long as her requirements are denied.

If others shall derive any pleasure from perusing these remarks, or feel encouraged in an endeavour to restore to the waters of our royal river the finest fish that can adorn it, I shall be well repaid my labour in penning down the result of my researches. They were made during some happy hours of recreation,* at a time when I greatly needed it; and although my privilege and calling as a "fisher of men" have attractions for me which render such hours very limited, I think it no impropriety to study the beauties and the phenomena of nature, persuaded that all creation is only a coarse engraving of those higher and sublimer truths which the spiritual kingdom possesses, and which are thus identified as coming from the same hand. Science has made great strides during the past century, and, unhappily it has, in too many

* At the residence of my brother, at Taplow.

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instances, obliterated the beauties of nature, so that one says of it, God made nature but man made machinery. I humbly conceive that another effort only is wanting, and that then we may enjoy all the benefit which science and the fertile genius of man have produced without the destruction of those matchless beauties of Creation, the study of which is so refining and so healthful, and which, rightly understood, is so heavenward in its tendency.

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This Edition was printed September, 1874, *and a few changes have been referred to in foot notes.*

G. V.

George Nall, Printer by Steam Power, 182, King Street, Yarmouth.

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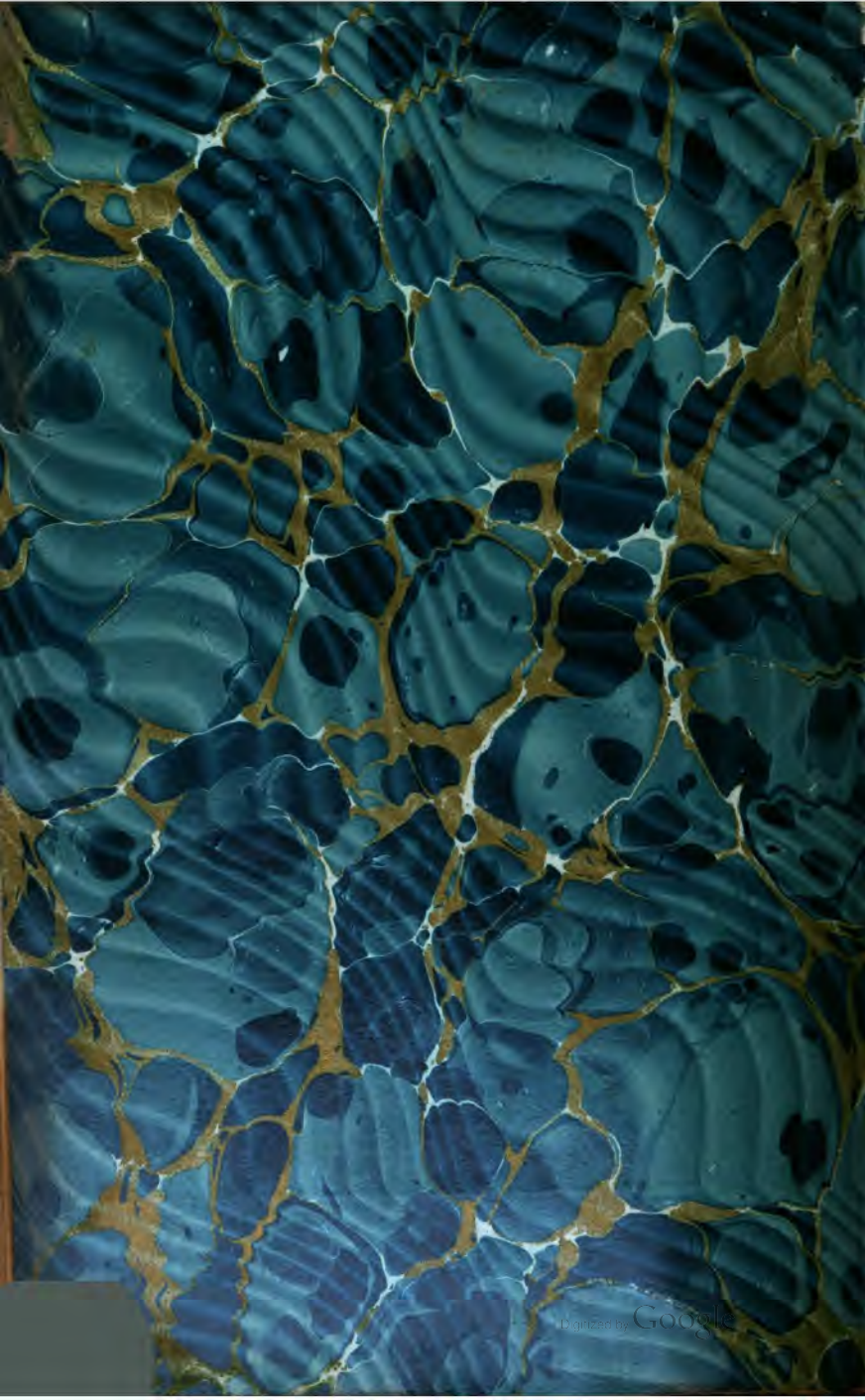
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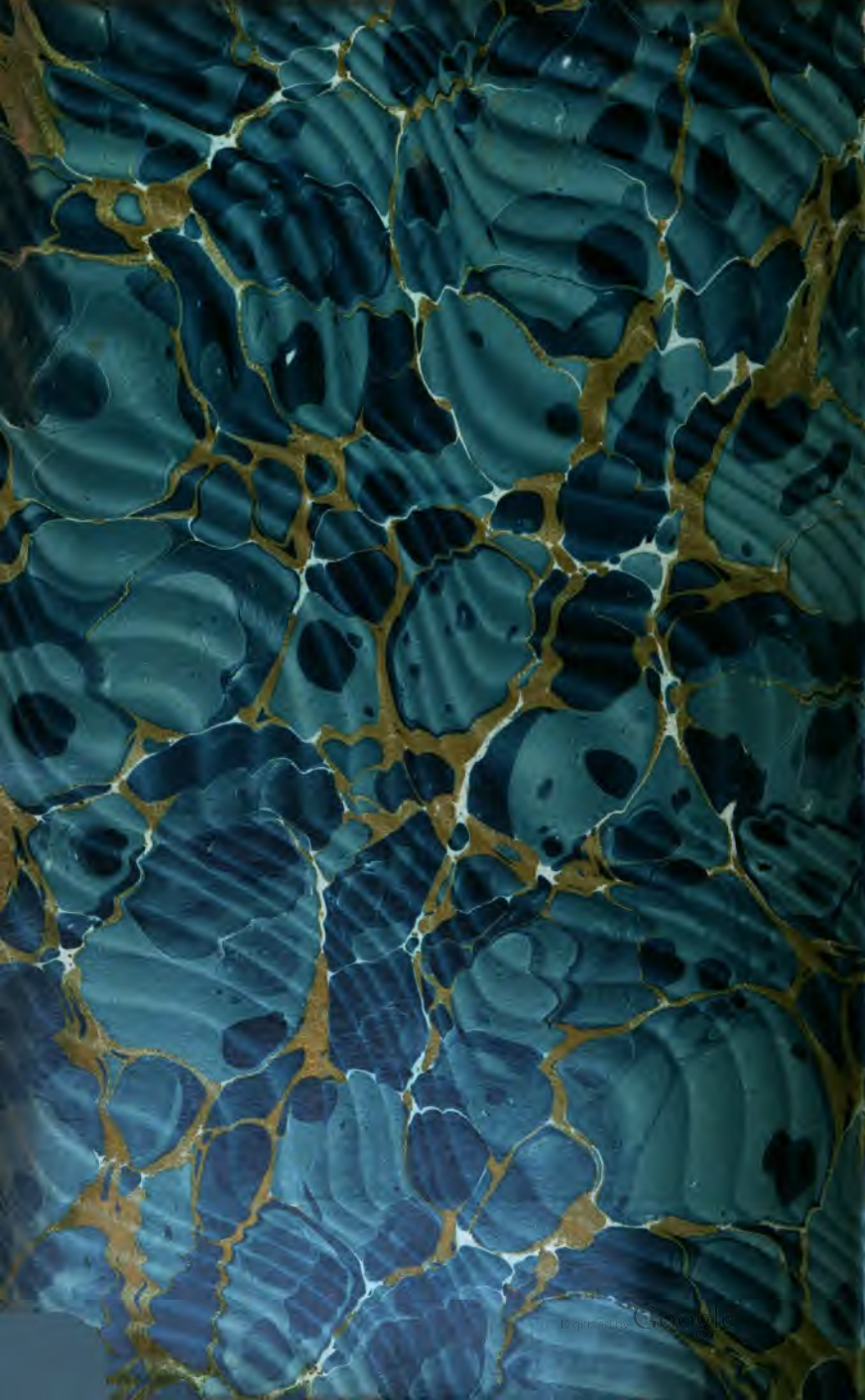
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